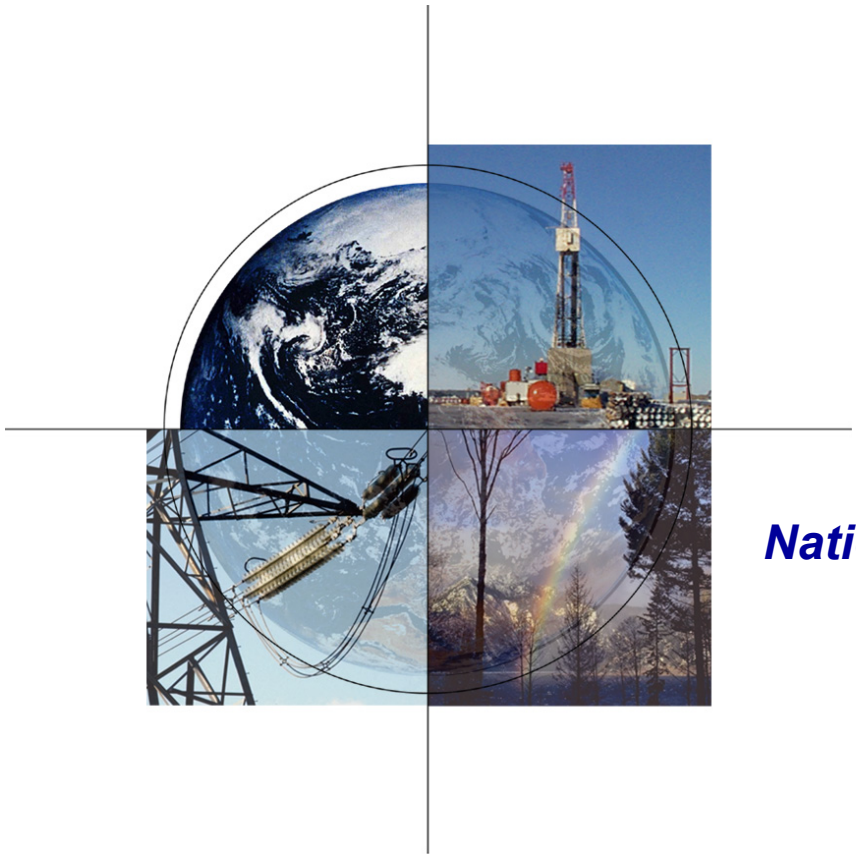
Arctic Energy Technology Development Laboratory



A Cooperative Agreement
between
University of Alaska Fairbanks
&
National Energy Technology Laboratory

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Mission

(Conf. Report: HR 106-945)

- **Fossil Energy:**
  - **Promote research, development and deployment of oil recovery, gas-to-liquids and natural gas production & transportation**

- **Remote Power:**
  - **Promote research, development and deployment of electric power in arctic climates, including fossil, wind, geothermal, fuel cells, and small hydroelectric facilities**

Strategy for AETDL/ARO

- **Goal: Create an in-state resource for expansion and coordination of arctic related RD&D in energy technology**

- **Capitalize on the unique knowledge and experience of people who live and work in Arctic conditions**
  - Use local industry to define research needs
  - Focus expertise to address needs
  - Encourage teaming between UA, Industry & DOE

Project Solicitation Process

- One page pre-proposals solicited

- PI's for the top 12 projects in each area made 15-minute presentations to the panel Feb 26-27 in Anchorage

- Top ranked projects will be recommended for funding under the Cooperative Agreement

Project Solicitation Process

- One page pre-proposals solicited
  - Received proposals on January 18
    - 27 fossil energy projects
    - 34 remote electrical projects
  - Reviewed & ranked by industry panels on Feb. 13
- PI's for the top 12 projects in each area made 15-minute presentations to the panel Feb 26-27 in Anchorage
- Top ranked projects will be recommended for funding under the Cooperative Agreement

Project Review Criteria

- Relevance to AETDL mission
- Relevance to industry
- Strength of partnership
- Uniqueness of approach
- Strength and viability of idea
- Impact to Alaska if project succeeds
- Leverage of funding
- Clarity of proposal, milestones and objectives
- For ongoing projects, accomplishments vs. proposed accomplishments

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SUMMARY
Remote Power Projects

- 34 Proposals seeking a total of
  $6.6 million (Cost Share: 23%)

- 4 agencies, 9 native organizations,
  29 companies, 8 utilities, 2 municipalities,
  3 national labs, 1 non-profit and 2 outside universities partnered with 10 UA faculty

- Of the 12 projects selected for the next step, 1 agency, 7 native organizations, 7 companies, 4 utilities, 2 municipalities, and 1 outside university partnered with 8 UA faculty

SUMMARY
Fossil Energy Area

- 27 Proposals seeking a total of $7.7 million

- 8 agencies, 19 companies, 2 municipalities, 4 national labs, 1 non-profit and 8 universities partnered with 18 UA faculty

- Of the 12 projects selected for the next step, 3 agencies, 3 national labs, 11 companies, 1 non-profit and 6 universities partnered with 10 UA faculty

Summary of the Top Ranked Projects
(Examples only. Not all will be funded.)
(Not in a Particular Order.)

- **Remote Power**
  - Methanol-fired fuel cell power systems
  - Solid oxide fuel cell systems
  - Development & testing of tilt-up guyed tower for wind turbine on permafrost
  - In-river turbines
  - Village power systems performance monitoring
  - Hybrid remote power stations
- **Fossil Energy**
  - A novel methane hydrates recovery method
  - Implications of mid-winter pumping of tundra pond
  - Low-rank coal grinding performance vs. boiler performance
  - Small-bore technology for CBM development
  - Verification of CO2 sequestration in the arctic

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